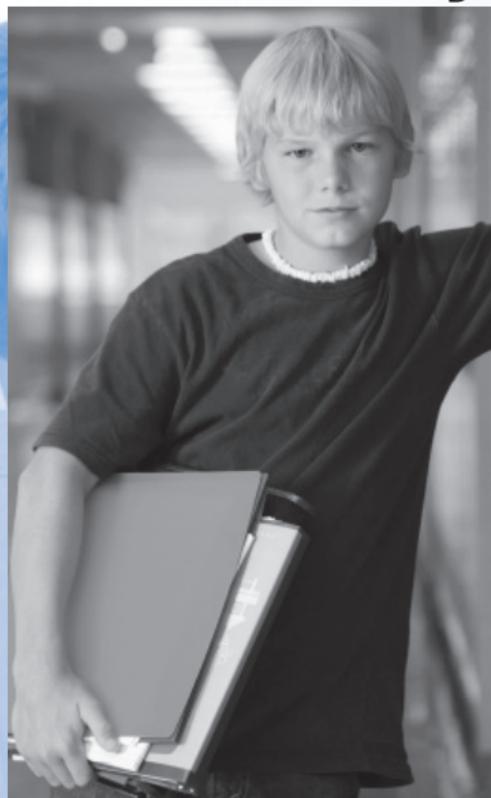


MATHEMATICS



Utah Achievement Trends

How Are We Doing?
8th Grade Performance



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8th Grade MATH ACHIEVEMENT

The bottom line...

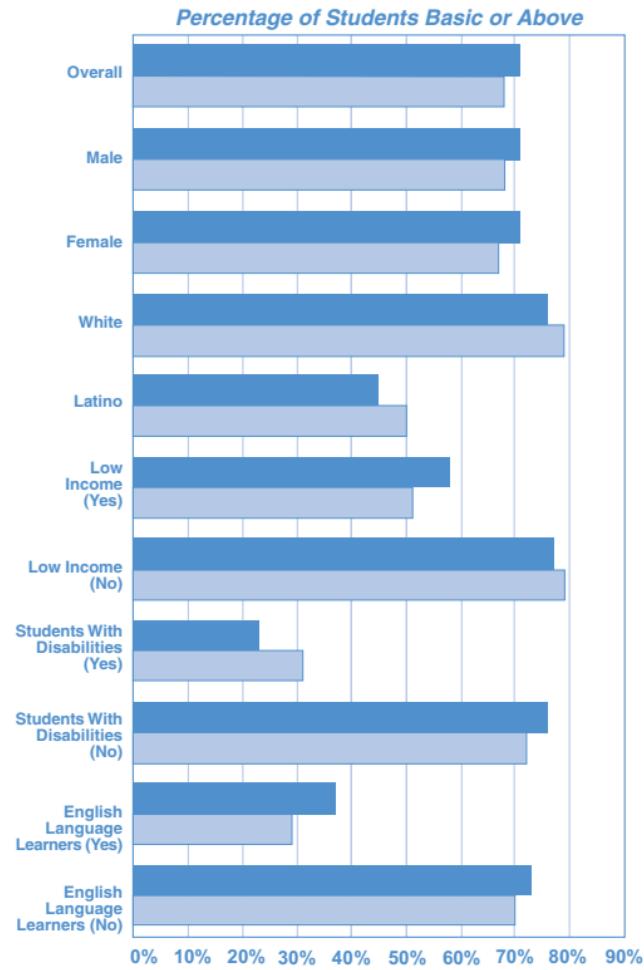
- Utah 8th grade NAEP* math performance is significantly higher than the nation overall, as well as for several subgroups (e.g., females, low income students).
- The nation is higher than Utah white students and students with disabilities in 8th grade NAEP math.
- There are substantial achievement gaps for Latinos, English language learners, and students with disabilities in 8th grade math.
- Eighth grade students in Utah can be enrolled in one of several math courses, and there are significant differences in math course-taking patterns for the different racial/ethnic groups; a greater proportion of 8th grade American Indians, Latinos and African Americans are taking lower-level math courses than the state average.
- On the Utah Core CRTs**, there is an upward performance trend for 8th grade students in Math 7, Pre-Algebra, Elementary Algebra and Geometry. This pattern is encouraging.
- There remains a math achievement gap, particularly for American Indians, Latinos, and African Americans. These are the same groups that tend to be enrolled in lower-level math courses. This presents a dual concern and an area for significant focus.

* NAEP—The National Assessment of Educational Progress. A representative sample of Utah 8th grade students takes NAEP every two years. To learn more, go to <http://nces.ed.gov/nationsreportcard/>.

** Utah Core CRTs—A state-developed assessment specifically designed to measure student understanding of the Core Curriculum.

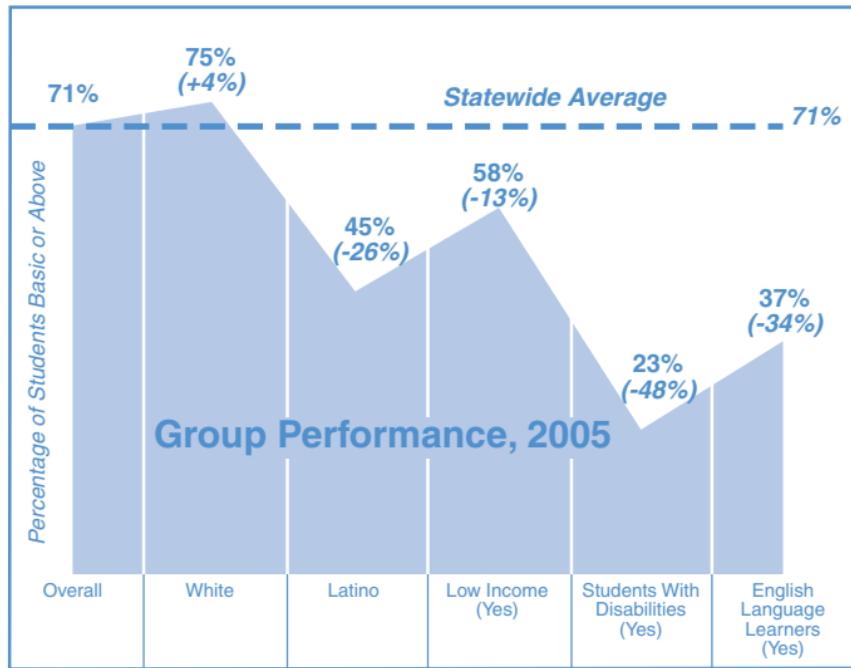
NAEP 8th Grade Math Performance

■ Utah ■ Nation, 2005



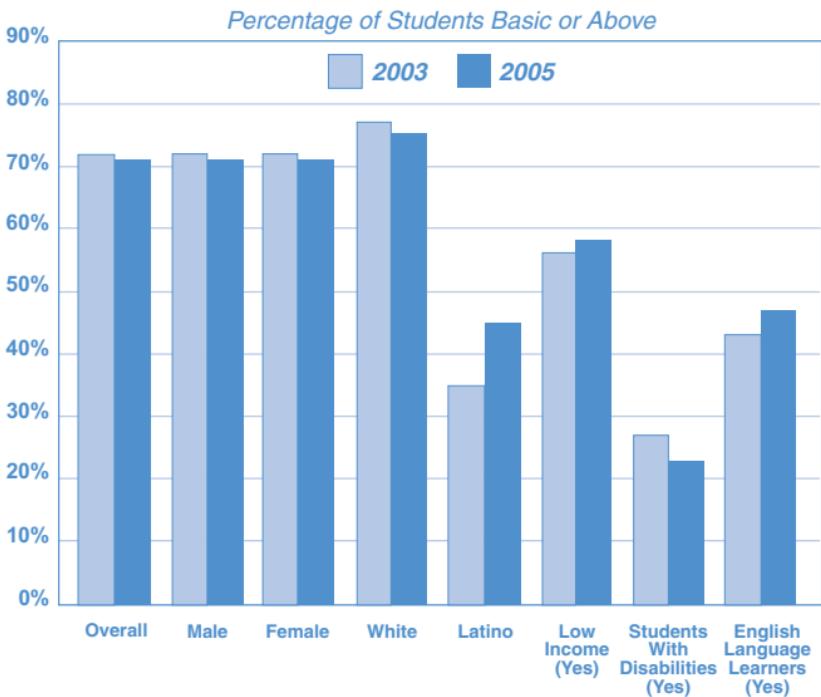
- Overall, Utah 8th grade NAEP performance is significantly higher than the nation in 2005.
- Utah maintains a statistically significant performance advantage over the nation in several (5 of 11) groups (see NAEP data table). Some of the largest performance differences in math favoring Utah's 8th grade students are for female students and low income students.
- Currently, their national peers are outperforming Utah's white students and students with disabilities in 8th grade math on the NAEP.
- There are substantial achievement gaps for both Utah and the nation.
- Some of the largest math achievement gaps are for English language learners and students with disabilities on the 8th grade NAEP.

Utah's 2005 NAEP 8th Grade Math ACHIEVEMENT GAP



- There are substantial and significant achievement gaps for Latinos, English language learners, and students with disabilities in 8th grade math.
- This NAEP achievement gap in percentages basic or above ranges from -13% to -48% for these groups.
- This Utah achievement gap is not unique to the NAEP assessment on math. These groups have similar achievement gaps as measured by both the Utah Core CRTs (see the Utah Core CRT data table) and the Iowa Test of Basic Skills (ITBS).

Utah NAEP 8th Grade Math PERFORMANCE TREND



- Performance is relatively level for several groups. A few groups are starting to show gains (e.g., English language learners).
- The upward performance trend of Latinos (up 10%) is particularly encouraging and needs to continue.
- There remain significant achievement gaps over this period of time. There is, however, a positive narrowing of the 8th grade math achievement gap for Latinos and for English language learners on the NAEP.
- Nationally, 8th grade math performance is also level for many groups from 2003 to 2005 (see the NAEP data table).

Utah NAEP Grade 8 Mathematics

Achievement—Percentage at or Above Basic

Group	Utah			Nation		Utah vs. Nation 2005	Sig ^d				
	2003	2005	Dir ^c	Imp ^b	2003	2005					
Overall	72% ^a	71%	level	—	67%	68%	level	3%	*		
Male	72%	71%	level	—	67%	68%	level	3%			
Female	72%	71%	level	—	66%	67%	level	4%	*		
White	77%	75%	down	2	—	79%	79%	level	-4%	*	
African American	—	—	—	—	39%	41%	up	2	NA		
Latino	35%	45%	up	10	yes	47%	50%	up	3	-5%	*
Low Income (Yes)	56%	58%	up	2	—	47%	51%	up	4	7%	*
Low Income (No)	78%	77%	level	—	78%	79%	level	—	-2%		
Students With Disabilities (Yes)	27%	23%	down	4	—	29%	31%	up	2	-8%	*
Students With Disabilities (No)	76%	76%	level	—	71%	72%	level	—	4%	*	
English Lang. Learners (Yes)	33%	37%	up	4	—	26%	29%	up	3	8%	
English Lang. Learners (No)	74%	73%	level	—	69%	70%	level	—	3%	*	

- a **Percentage** indicates the percentage of 8th grade students who scored basic or above on the NAEP assessment.
- b **Improving** means an increase in the percentage of students scoring basic or above on the NAEP.
- c **Direction** indicates the change in percentage of students who scored basic or above between 2003 and 2005.
- d The asterisk indicates a statistically **significant** difference ($p < .05$) between Utah in 2005 with the nation in 2005.

“Utah Achievement Trends” is a Utah NAEP program publication. This report is available at www.schools.utah.gov/eval/Info_NAEP.asp.

Course-Taking Patterns

Percentage of 8th Grade Students in Different Math Courses

Group	Year	Math 7	Pre-Algebra	Ele. Algebra	Geometry
Overall	2004	2.5%	49.0%	39.8%	8.7%
	2006	1.9%	46.8%	43.0%	8.3%
White	2000	1.7%	44.5%	47.9%	5.9%
	2004	2.1%	45.3%	42.9%	9.7%
	2006	1.7%	42.7%	46.3%	9.2%
Latino	2000	8.8%	65.5%	24.7%	0.9%
	2004	5.0%	71.8%	21.0%	2.1%
	2006	2.9%	70.4%	24.5%	2.2%
Asian	2004	1.8%	36.8%	44.1%	17.3%
	2006	2.1%	30.5%	48.1%	19.4%
African American	2004	6.5%	68.0%	22.0%	3.5%
	2006	2.8%	61.9%	33.0%	2.3%
American Indian	2004	4.7%	74.1%	18.8%	2.4%
	2006	2.2%	70.9%	25.1%	1.8%
Pacific Islander	2004	1.4%	60.0%	34.1%	4.4%
	2006	0.9%	58.1%	35.5%	5.5%

A critical aspect of examining 8th grade math achievement is to gain an understanding of math course-taking patterns. Utah 8th grade students can be enrolled in one of several different math courses assessed by the Core CRTs. Are there differences in 8th grade math course-taking patterns in Utah?

- | There are significant differences in math course-taking patterns for different racial/ethnic groups.
- | From 2000 to 2006, a greater proportion of white 8th grade students are in more upper-level math courses than Latino 8th graders. A greater proportion of Latino students are taking lower-level math courses in 8th grade compared to white students.
- | From 2004 to 2006, a greater proportion of American Indian and African American 8th grade students are also taking lower-level math courses compared to the state average.
- | Compared to the state overall, African Americans and American Indians are showing substantial increases in the percentage of students taking Elementary Algebra from 2004 to 2006. This is positive news.

Utah Core CRT Grade 8 Mathematics

Achievement—Percentage of Students Proficient^a

Group	Year	Math 7	Pre-Algebra	Ele. Algebra	Geometry
Overall ^b	2004	47.2%	56.8%	83.2%	93.8%
	2006	59.5%	63.8%	84.6%	96.1%
White	2004	51.1%	61.1%	84.6%	94.7%
	2006	63.1%	69.5%	86.3%	96.8%
Latino	2004	37.2%	40.8%	68.5%	75.9%
	2006	44.5%	45.4%	70.0%	85.9%
Asian	2004	45.5%	58.2%	85.9%	88.7%
	2006	69.2%	66.7%	82.2%	94.2%
African American	2004	37.5%	41.1%	64.6%	76.9%
	2006	75.0%	44.8%	68.5%	80.0%
American Indian	2004	39.3%	35.9%	64.0%	78.6%
	2006	53.3%	46.3%	61.9%	100.0%
Pacific Islander	2004	42.9%	54.5%	67.5%	81.8%
	2006	20.0%	57.7%	76.3%	76.7%

a Percentage indicates the percentage of 8th grade math students who scored Proficient (Level 3 or Level 4) on the Utah Core CRTs.

b Number of 8th grade students enrolled and tested during spring 2006:
Overall State 36,909, White 30,105, Latino 4,437, Asian 620, African American 433, American Indian 670, Pacific Islander 546.

- There is an upward performance trend statewide for 8th grade students in Math 7, Pre-Algebra, Elementary Algebra, and Geometry from 2004 to 2006.
- Eighth grade students who are enrolled in Geometry are, on average, demonstrating strong math achievement.
- There are clear math achievement gaps for 8th grade African Americans, Latinos, and American Indians compared to the state. This same pattern is observed on the 8th grade Iowa Test of Basic Skills.
- Along with performance differences, a greater proportion of these same groups tends to be enrolled in lower math courses. This presents a dual concern and an area for significant focus.
- Eighth grade groups that had the largest gains in percentage of students proficient are Pacific Islanders (Elementary Algebra), Latinos (Geometry), and Asians (Geometry).